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Integration of Strategic Management and Quality Assurance in the Romanian Higher Education

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Abstract

The purpose of the present study is to investigate the relationship between total quality management and strategic issues in Romanian higher education, of the way to implement quality management systems in universities with view to achieving superior organizational performances. To this end we have analyzed the relation between quality and strategy. We have defined a strategy for integrating quality which has a central role in the competitive strategies, believing that the balance of determination is the opposite of the traditional, so the university's quality strategy determines the other competitive strategies: marketing strategy, teaching strategy, scientific research strategy.

The article proceeds in the following manner: first, we briefly review the literature regarding the relation between quality and strategy. We develop hypotheses concerning integrated quality strategy as defensive strategy that emphasizes the quality control of the educational and scientific research processes. Then we apply our model to a case study showing how Petru Maior University of Tirgu Mures (UPM) applies defensive strategy controlling the quality of educational and scientific research processes by implementing a quality management system, with its novelty aspects that is a combination between requirements of the ISO 9001 standard and the requirements of the Romanian Agency for Quality Assurance in Higher Education (ARACIS). We explain in detail the case study. Finally, we provide the research findings and discuss their managerial and theoretical implications.

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Keywords: Integrated quality strategy; Performance indicators; Quality management system; Process matrix; Higher education

1. Introduction

The issue to present both the reform of education at the confluence of economic, political and socio cultural factors in a system in transition to democracy and a functional market economy and the evolution of higher education in Romania after 1990, as an illustration of the transition period in Central and Eastern Europe, has been studied by different researchers (Nicolescu, 2003, Singer, 2007).

Educational market in Romania has experienced a continuous diversification: there are currently more than 90 state and private universities acting at national, regional or local level, and there is a strong competition between them. Since 2006, these institutions have been obliged to implement quality management systems in accordance with the requirements of the Romanian Agency for Quality Assurance in Higher Education (ARACIS), which is a state accreditation institution. The objective of state accreditation is to define the type of a university: focused on a)

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education; b) education and scientific research; or c) advanced research and education. It is based, in many respects, on evaluation of university resources that ensures quality of education and scientific research activities.

This paper presents a case study of the relationship between total quality management and strategic issues in the Romanian universities, exemplified in Petru Maior University of Tirgu Mures (UPM). This is a medium size state university, which recruits students from the region where they operate. The paper presents UPM strategies based on quality, which aims to strengthen regional market.

2. Relation between Quality and Strategy

There is very considerable variation both nationally and institutionally in the way quality issues are “managed” in higher education (Brennan and Shah, 1997). An international comparison of the extent of commonality or diversity in the main national external quality assurance frameworks for higher education shows that a “general model” of external quality assurance does not universally apply, but that most elements of it do apply in most countries. The “general model” provides a starting point from which to map deviations. In each country, there may be specific additions of elements or omissions from the model, but more usually there are modifications or extensions of elements. These variations are determined by practicalities, the size of the higher education sector, the rigidity/flexibility of the legal expression of quality assurance and the stage of development from the state control of the sector (Billing, 2004).

H1: Strategies focused on quality, are positively related to the other competitive strategies adopted by the universities.

Through quality, competitive strategies can be developed. They describe how the university plans to gain advantage over competitors and are differentiated by the nature of guidance in order to ensure the competitiveness of the organization: Strategies aimed at differentiating curricula in various forms of education: day courses, part time courses, distance courses; Strategies focused on a demand of the market in a particular qualification; Strategies focused on technological advantage by using new educational technologies such as blended learning, learning management systems and video systems; Strategies focused on quality of the educational program, etc.

Strategies focused on the quality are among the competitive strategies, while being in dependence relationship on other competitive strategies adopted by the university. Quality mission is generally to meet competition, which is why there may be two types of strategies:

- defensive strategy, keeping the market, that focuses on the quality assurance control of the educational and research processes in the university,
- offensive penetration strategy, which focuses on creating educational programs at technical and quality level located over or at least to the competitors.

The concept of Total Quality Management, EFQM Excellence Model and ISO 9001:2008 implementing a process-based approach to management are popular among European universities. Although the advantages of the process-based approach to quality management of any target-based organizations (e.g., universities) are vivid, there is still much room for improvement. It should be noted that universities’ process management needs some improvement in the field of quality management of the results of scientific and educational activities (Chuchalin, and Zamyatin, 2011).

3. Quality Defensive Strategy

Quality defensive strategy must regard the two functions of the university: teaching and scientific research. Teaching quality emerged as a significant issue in higher education during the 90s. This led to the implementation of numerous quality controls, assurance and enhancement schemes as institutions attempted to stay abreast of demands from various stakeholders in a rapidly changing educational environment (Kulski and Groombridge, 2004). Education policy documents have recently placed great emphasis on teacher quality in the belief that “education of the highest quality requires teachers of the highest quality”. Teachers are active voices in the policy-making process (Thomas, 2005). The higher education system is encouraged to improve and enhance creativity in accordance with the results so as to enhance innovation level and fulfil the national goal of efficiency (Chen and Chen, 2011). Institutions constraining this set of defensive innovation strategies on scientific research and reducing its deterring effects may increase the resources devoted to innovation and also the number of active scientific research participants (Ledezma, 2008).

A support of quality defensive strategy is the implementation of quality management system (QMS) under the requirements of the standard ISO 9001, but also the specific requirements for educational mainframe systems in each

country. In Romania they are promulgated by the Emergency Ordinance no. 75/2005 of the Romanian Government on quality assurance in education and the Romanian Agency for Quality Assurance in Higher Education (ARACIS) which in 2006 had elaborated the “External assessment methodology, standards, reference standards and the list of performance indicators”.

3.1. Integrated Quality Strategy

Research on Total Quality Management (TQM) has examined the relationships between the practices of quality management and various levels of organizational performance (Kaynak, 2003). There is a paucity of in-depth research examining this complex relationship (Leonard and McAdam, 2001). The relationship between TQM practice and organizational performance is significant in a cross-sectional sense, in that TQM practice intensity explains a significant proportion of variance in performance. Some but not all of the categories of TQM practice were particularly strong predictors of performance. The categories of leadership, management of people and customer focus were the strongest significant predictors of operational performance (Samson and Terziovski, 1999).

There is a need for TQM to be considered from a philosophical level rather than simply as an operational tool (Leonard and McAdam, 2001). In universities there has been a change from informal “light-touch” quality control systems based on local practices and a significant amount of trust and professional autonomy in the early 1990s to a highly prescribed process of audit-based quality control today (Hoecht, 2006).

Before quality management system implementation in UPM, quality strategy was dependent on the educational marketing strategies, the teaching strategy, the scientific research strategy, believing that quality strategy was a result of other competitive strategies (Fig. 1).

Thus, a strategy that integrates quality has been elaborated (integrated quality strategy based on performance indicators), which has a central role in the competitive strategies, believing that the current approach of determination is opposite to the traditional one (Fig. 2).

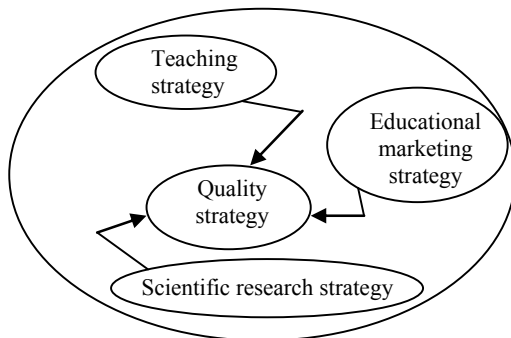


Fig. 1. The traditional approach of the relationship between quality strategy and competitive strategies in UPM

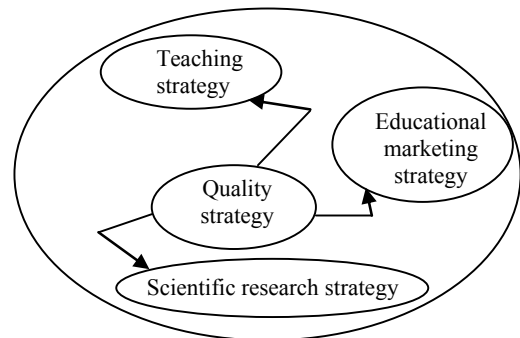


Fig. 2. The current approach of the relationship between quality strategy and competitive strategies in UPM

H2: Integrated quality strategy determines other competitive strategies.

3.2. Performance Indicators Strategy

The application of performance indicators to higher education is a phenomenon that belongs to the nineteenth and twentieth centuries, although there are reverberations from an earlier period (Bruneau and Savage, 2002). The indicators are regarded as tools to support universities, to encourage and continue subsidizing public and private higher education. Most performance indicators, though, have had some kind of funding attached to them, even if “performance-related pay” was usually a very small fraction of total institutional income. Among jurisdictions that publish institutional performance indicators, institutional graduation rates appear to be the only key indicator that has universal acceptance as a measure of institutional performance. Beyond this core indicator, different jurisdictions use very different measures depending on local policy contexts. Employment indicators are widely used as are measures of graduates’ satisfaction with their education. Financial performance appears just about everywhere, and is usually measured by having low administrative overhead. Less frequent are items such as faculty diversity, student default rates, fundraising performance, and quality data reporting (Finnie and Usher, 2005). The higher education

effectiveness in preparing graduates for work and life can be evaluated by alumni research using the model designed by Delaney in 2004. The rank data show that the specific measures and indices used by magazines are inconsistently related to each other and to the universities' final assigned rankings (Page and Cramer, 2004).

Governments and institutions are implementing strategies to ensure the proper performance of universities and several studies have investigated evaluation of universities through the development and use of indicator systems. There is a difficulty involved in establishing classification criteria for existing indicators, on which there is currently no consensus (Garcia-Aracil and Palomares-Montero, 2009).

H3: Performance indicators are tools achieving integrated quality strategy.

The changes implied by quality assurance must start at local level, i.e., individual courses and programs of study. The task of documenting such changes and, thereby, recognizing the impact of quality assurance policies and practices (accreditation and evaluation or assessment) makes it necessary to use different metrics at different levels of a higher education institution (Gray and Patil, 2009). Following this orientation in Romania ARACIS has elaborated "External assessment methodology, standards, reference standards and the list of performance indicators", which in fact is an indicator system for evaluation of the university quality. These are structured on 3 main domains: A) Institutional capacity, B) Educational effectiveness, C) Quality management. According to the degree of fulfilment of the performance indicators, there are the following levels: minimum, reference 1, 2 and 3, but also own references.

In a first phase, UPM has adopted a quality strategy to establish, document, implement and update operating procedures and activities, based on domains, criteria, standards and performance indicators, required by ARACIS, for the levels minimum up to 3.

In order to have a strategic advantage, in the second phase, UPM has established 22 own references for the performance indicators levels, among which we mention:

- University involved student organizations in audit activities,
- Admission is considered in the formulation of university policies focused on quality,
- Creating structures that allow publishing of ISI articles,
- Assessing the effectiveness of university-level research is conducted on the procedures and specific documentations of the Quality Management System,
- Concerns of the university to stimulate research,
- Follow-up of financial and accounting activities of the university,
- Structures to track and improve quality of education,
- Participation of independent evaluators in the country and abroad,
- University involvement in research projects with objectives to improve university curricula,
- Concerns for the university's own quality assurance procedures,
- Quality Management System is documented according to the ISO 9001:2008 standard and ARACIS requirements - university processes are documented and measured periodically, etc.

As a consequence of the last indicator, in the third phase UPM has reorganized the QMS, by following the new editions of the quality management standards ISO 9001:2008 and the requirements of ARACIS, with the strategic objective to benefit from the advantages of both implementations.

3.3. Organization of Quality Management System

Total Quality Management has much to offer to higher education but that is not just a case of translating ISO 9001 from a product-based to a service-based system. Sensible application of total quality management principles in higher education in order to show a realistic improvement takes time, commitment and considerable investment by top management. The starting point should be a better understanding of customer needs, which can then be addressed through a process of service quality improvement which permeates the organizational structure (Watkins, 2007).

The findings indicate that a key element for a successful implementation of the new system is the institutions' own understanding of the rationale behind the system. Internal evaluations, annual reports and quantitative institutional basic data must be considered and also used by the institutional leaders and the academic staff members as "tools" for meaningful internal quality work and not just looked upon as strange elements requested from "above". The institutions' quality work must be considered a crucial "instrument" for strategic management of the entire institution.

According to ISO 9001, the quality management system involves all phases of the educational cycle and processes, from identifying the needs of customers to the final meeting of their requirements. In these activities the university has

focused on educational marketing, on determining and defining customer needs and its requirements for educational programs. To this end, UPM:

- has defined and documented activities that contribute directly or indirectly to the achievement of quality;
- has defined the general responsibilities and specific responsibilities in quality, as well as responsibilities and delegated authority for each activity affecting quality;
- has defined organizational structure related activities affecting quality.

3.3.1. Quality Management System Processes

A quality map that explicitly takes into account the environment, strategic planning and the internal processes of the organization, has been presented by Kettunen in 2005. The quality map helps the management of the higher education institution to present an overview of the quality assurance system to the external evaluators, members of the organization, students and other stakeholders.

UPM has identified QMS processes and ordered them in four categories:

- management processes to coordinate the work of the University,
- basic processes are the core of the quality management system,
- support processes necessary for sustaining basic activities,
- measurement, analysis and improvement processes for the effectiveness of QMS.

Starting from the process categorization, UPM has drawn up a process map (Fig. 3). For each departmental process is named a process responsible - the executor or head of department; for interdepartmental processes, as well as for projects, there are process / project owners - they are responsible for controlling the interfaces and the achievement of performance indicators of the process.

Complying with ISO 9001 requirements, UPM has developed quality management system documentation, through interpretation and adaptation of ISO 9001 standard requirements to the university areas of activity: higher education and scientific research. In a first stage have been developed quality policy and quality objectives, followed by quality manual and operational procedures describing the quality management processes.

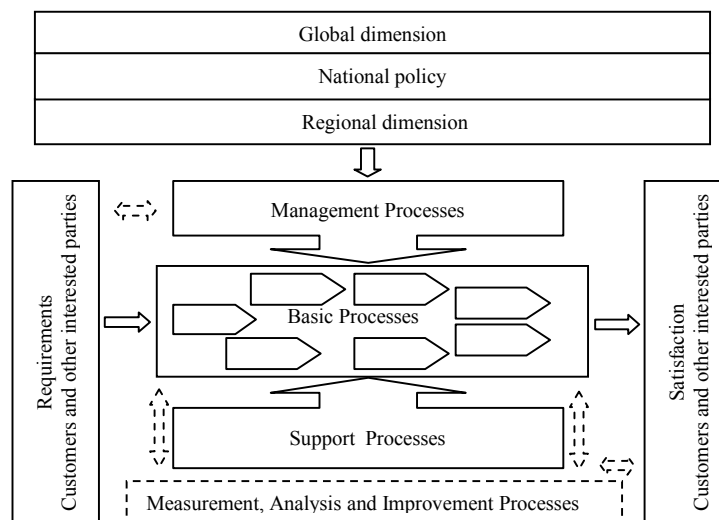


Fig. 3. UPM's process map

There are 33 operational procedures among which we mention: Curriculum development, Syllabus development, Organizing training on credit transfer system, Management of scientific research, Conducting competitions for filling teaching positions, Organizing and managing the library, Department state functions development, Organization and conduct of entrance examination, Conduct tests with students and learners, Organization and conduct for examinations of completion of studies, etc.

3.3.2. Process Matrix

According to the ISO 9001 standard requirement 8.2.3-Monitoring and measurement of the processes, the university has to apply adequate methods for quality management system process measurement, based up on process indicators.

UPM has developed a system of process indicators that are similar to performance indicators, presented in the ARACIS methodology. Each procedure of the quality management system developed in the ISO 9001 system is applied to achieve ARACIS performance indicators, which are also process indicators measuring the performance. Criteria for selecting indicators refer to measurable quantities and are related to staff motivation system.

The documentation of the processes, the periodical measurement and the allocation of ARACIS indicators specific to each type of process are documented in the Process Matrix (table 1). It outlines a new element for quality management systems in Romanian higher education.

Defining elements of matrix processes for two basic processes are exemplified in table 1. Following the allocations identified in the processes matrix, there are developed operational procedures that are applied in order to achieve ARACIS performance indicators. Complete documentation of processes ensures planning, operation and effective control of processes.

Table 1. UPM's Process matrix

Process name	Documented procedure	Process responsible	Input data	Output data	Measuring method	Meas. freq.	Performance indicator	Spec. obj.
.....								
Curriculum development	Elaboration of new study programs	Head of department	<ul style="list-style-type: none"> • Specification of study progr. • Ministry req. • ARACIS req. • Legislation • Benchmarks in RO and EU 	<ul style="list-style-type: none"> • The curriculum of the specialization 	<ul style="list-style-type: none"> • Number of new programs / updated • Number of nonconformities of the curriculum 	Annual	<ul style="list-style-type: none"> • Curricula structure • Differentiation in implementing study programs 	Ref. 1 Ref. 2
Scientific research	Management of scientific research	Scientific Vice-Rector	<ul style="list-style-type: none"> • Research plan of the faculty / department / • Advertisements competitions / grants / scientific events 	<ul style="list-style-type: none"> • Grants • Articles / books / studies / research publication • Patents • Awards National / International 	<ul style="list-style-type: none"> • Number of books / study / research published • Score obtained in national evaluation 	Semestrial	<ul style="list-style-type: none"> • Research programming • Making research • Turning research 	Ref. 1 Ref. 2 Ref. 1
.....								

3.3.3. Implementation Effects

UPM management appreciates that it has established, documented and implemented with success a quality system that meets both ARACIS national legal requirements and international ISO 9001 standard requirements. The latter is necessary due to market considerations but also because of some organizational advantage offered by ISO 9001 implementation. The standard provides some mechanisms which lead to organizational improvement, for example the treatment of nonconformities which ensures that the same nonconformity will not happen again if effective corrective actions are established.

UPM management appreciates that the challenge lies in maintaining and improving the system. In order to create a quality culture in the university it is necessary to have frequent trainings of the staff on different quality subjects. The strong personality of many members of the academic community makes certain demands of the management systems to be highly disputed. Another obvious obstacle in implementation UPM has faced is the large volume of the reports and registrations demanded by the quality management system.

The main success in implementation is the result of UPM evaluation by ARACIS, which granted the university "high confidence". With this result UPM ranks among top universities in Romania. This confirms the validity of

quality defensive strategy adopted by the university whose main result is the clients' confidence: admittances, students, employers.

4. Conclusion

This study has presented the concept of *quality defensive strategy*, which emphasizes control of the university educational and scientific research processes.

A strategy that integrates quality has been defined (quality integrated strategy based on performance indicators), which has a central role in competitive strategies, demonstrating that the current approach of determination is opposite to the traditional one, so the quality strategy determines other competitive strategies.

In Romanian universities, implementation of the quality management systems in accordance with ISO 9001 standard is not a legal requirement. The legal requirements for quality assurance in universities are formulated by the national accreditation body ARACIS in the “External assessment methodology, standards, reference standards and the list of performance indicators”, organized in three domains with specific standards and performance indicators that can be fulfilled on different levels. UPM management has decided to implement the quality management system that meets both legal and ISO requirements, but also to develop own levels for the performance indicators.

In a first phase, UPM has adopted a quality strategy to establish, document, implement and update operating procedures and activities, based on domains, criteria, standards and performance indicators, required by ARACIS. In order to have a strategic advantage, in the second phase, UPM has established 22 own references for the performance indicators levels.

In the third phase, UPM has reorganized its QMS, by following the new editions of the quality management standards, ISO 9001:2008 and the requirements of ARACIS, with the strategic objective to benefit from the advantages of both implementations.

Starting from the process categorization, UPM has drawn up a process map that explicitly takes into account the environment, strategic planning and the internal processes of the organization. It is the support for the QMS documentation.

Each procedure of the quality management system developed in the ISO 9001 system is applied to achieve ARACIS performance indicators, which are also process indicators measuring the performance. The documentation of the processes, the periodical measurement and the allocation of ARACIS indicators specific to each type of process are documented in the Process Matrix. It outlines a new element for quality management systems in Romanian higher education.

The quality management system implemented by UPM has practical implications for practitioners from universities due to the establishment of the correspondences between the requirements for quality management systems formulated by ISO 9001 international standards and accreditation body for academic management systems ARACIS. The case study is an example for quality managers from Romanian universities. The contribution consists in the modality of documenting processes, the periodical measurement and the allocation of ARACIS performance indicators to each process that is documented in the Process Matrix. It establishes correspondences between the requirements of ISO 9001 standard and ARACIS performance indicators.

The adopted quality defensive strategy confirmation is appreciated through the immediate result of confident customers and through the outcome of UPM evaluation by ARACIS, which granted “high confidence” to the university.

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